

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 10 AUG 2000

WIPO PCT

Applicant's or agent's file reference 2362-101.PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US99/05453	International filing date (day/month/year) 12 MARCH 1999	Priority date (day/month/year) 01 APRIL 1998
International Patent Classification (IPC) or national classification and IPC IPC(7): C01F 11/18 and US Cl.: 422/168; 423/155, 164, 165, 166, 178		
Applicant CHALMERS, FRANKLIN S.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This ~~REPORT~~ consists of a total of 4 sheets.
- ☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 13 SEPTEMBER 1999	Date of completion of this report 31 MAY 2000
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231	Authorized officer STEVE GRIFFIN DEBORAH THOMAS PARALEGAL SPECIALIST
Facsimile No. (703) 305-3230	Telephone No. (703) 308-0661

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/05453

I. Basis of the report1. With regard to the **elements** of the international application:*☒ the international application as originally filed☒ the description:pages 1-41 , as originally filedpages NONE , filed with the demandpages NONE , filed with the letter of _____☒ the claims:pages 42-48 , as originally filedpages NONE , as amended (together with any statement) under Article 19pages NONE , filed with the demandpages NONE , filed with the letter of _____☒ the drawings:pages 1-7 , as originally filedpages NONE , filed with the demandpages NONE , filed with the letter of _____☒ the sequence listing part of the description:pages NONE , as originally filedpages NONE , filed with the demandpages NONE , filed with the letter of _____2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☒ The amendments have resulted in the cancellation of:☒ the description, pages NONE☒ the claims, Nos. NONE☒ the drawings, sheets/fig NONE5. ☐ This report has been drawn as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

**Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. statement

Novelty (N)

Claims 1-25

YES

Claims NONE

NO

Inventive Step (IS)

Claims 1-17 and 20-25

YES

Claims 18 and 19

NO

Industrial Applicability (IA)

Claims 1-25

YES

Claims NONE

NO

2. citations and explanations (Rule 70.7)

Claims 18 and 19 lack an inventive step under PCT Article 33(3) as being obvious over Nadkarni 4078048.

Nadkarni teaches in column 3 an apparatus having a solution of barium sulfide, in contact with a waste gas containing sulfur bearing pollutants and a sulfide solution. Also present is a separator zone and a precipitation zone. Nadkarni differs in not teaching a calcium containing material, however this an obvious variant since Ca and Ba are in the same chemical group and are thus prima-facie chemically equivalent.

It is noted that the intended use of an apparatus does not limit it, in so far as any chemical can be introduced into the various zones of the apparatus with equal effectiveness to achieve the commensurate result.

Claims 1-25 meet the criteria set out in PCT Article 33(2) and (4), because the prior art does not teach the claimed process steps.

Claims 1-25 meet the criteria set out in PCT Article 33(4), because the process and apparatus have industrial utility to make useful compounds.

Claims 1-17 and 20-25 meet the criteria set out in PCT Article 33(3), because the prior art does not teach or fairly suggest the claimed process steps and additional pipes of claims 20 and 21.

----- NEW CITATIONS -----
NONE

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VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claim 19 is objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because the claim is indefinite for the following reason(s): it should depend from apparatus claim 18.